

REMARKS

By this amendment, applicants have amended the specification to explicitly include in the specification the subject matter recited in original claims 4 and 5 of the international application (claims 2 and 3 as amended). Applicants have also amended the claims to more clearly define their invention. In particular, claim 1 has been canceled without prejudice or disclaimer, and claims 2-9 amended to remedy the indefiniteness problems noted by the Examiner on page 2 and the top of page three of the office action and the non-statutory subject matter rejection on page 5 of the office action, and to recite that the thermal pre-ignition agents have an adjustable deflagration point, wherein the thermal pre-ignition agent has a deflagration point controlled based on the composition thereof. Applicants have added new claims 10-26 to define further aspects of the invention. Claims 10-22 recite preferred aspects of the invention canceled from claims 2 and 5-8. The amendments to claim 2 and new claims 23-26 are supported by, e.g., the disclosure at page 2, lines 2-9 of applicants' specification.

In view of the foregoing amendments, it is submitted all the claims now in the application comply with the requirements of 35 U.S.C. §§112, second paragraph, and 101. Therefore, reconsideration and withdrawal of the rejection of claims 1-8 under 35 U.S.C. §112, second paragraph, and of the rejection of claim 9 under 35 U.S.C. §101 are requested.

Claims 1-8 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 4,379,007 to Fifer et al. in view of the article by Clark in *Ind. Eng. Chem.*, 1933, 25(12), 1384-1390 (hereinafter

“Clark”). Applicants traverse this rejection and request reconsideration thereof.

The present invention relates to thermal pre-ignition agents having an adjustable deflagration point. The thermal pre-ignition agents have a composition comprising from 10 to 50 wt. % dipicrylaminoethyl nitrate, from 40 to 60 wt. % of an oxidizing agent, and 10 to 60 wt. % of a nitrogen-containing compound other than dipicrylaminoethyl nitrate and the oxidizing agent. The thermal pre-ignition agent has a deflagration point controlled based on the composition thereof.

The Fifer et al. patent relates to novel nitramine propellant compositions for guns and rockets, and is based on the alleged finding that the burn rate of nitramine propellants can be significantly increased over a wide range of pressures by incorporating therein a metal tetrahydridoborohydride of the formula $\text{Me}(\text{BH}_4)_x$, wherein Me represents an alkali metal or an alkaline earth metal, and x is 1 when Me is an alkali metal and x is 2 when Me is an alkaline earth metal. It is disclosed that, preferably, the propellant compositions contain the nitramine component in amount of about 50-80% of the total weight of the propellant composition, and that the nitramine propellants include but are not limited to RDX, HMX, Tetryl (2,4,6-trinitrophenyl methyl nitramine, NGU (nitroguanidine) and EDNA (ethylenedinitramine). It is further disclosed that the propellant compositions may contain other additives conventionally employed in nitramine based propellants, e.g. other oxidizers such as ammonium nitrate and TNT, metals such as aluminum, carbon black, plasticizers, etc in amounts of about 0-20%

of the total weight of the propellant.

As recognized by the Examiner, the Fifer et al. patent does not disclose the use of dipicrylaminoethyl nitrate. Also, the Fifer et al. patent does not disclose a composition including 10 to 50 wt. % dipicrylaminoethyl nitrate, from 40 to 60 wt. % of an oxidizing agent, and 10 to 60 wt. % of a nitrogen-containing compound other than dipicrylaminoethyl nitrate and the oxidizing agent. For example, the amount of oxidizer described in Fifer et al. is only about 0-20% of the total weight of the propellant. Certainly, the Fifer et al. patent also does not disclose thermal pre-ignition agents having an adjustable deflagration point, in which the deflagration point is controlled based on the composition thereof, as presently claimed.

The Examiner cites the Clark publication as disclosing analogs of Tetryl such as dipicrylaminoethyl nitrate. However, even assuming, *arguendo*, one of ordinary skill in the art would have used dipicrylaminoethyl nitrate as the nitramine propellant in Fifer et al., there would have been no reason to include the dipicrylaminoethyl nitrate in an amount of 10 to 50 wt. % along with from 40 to 60 wt. % of an oxidizing agent and 10 to 60 wt. % of a nitrogen-containing compound other than dipicrylaminoethyl nitrate and the oxidizing agent to provide thermal pre-ignition agents having an adjustable deflagration point, in which the deflagration point is controlled based on the composition thereof, as presently claimed.

Accordingly, claims 2-8 are patentable over the proposed combination of Fifer et al and Clark. Applicants submit claims 9-26 are also patentable over the proposed combination of Fifer et al and Clark for the reasons noted

above.

Please charge any shortage in the fees due in connection with the filing of this paper, to the deposit account of Antonelli, Terry, Stout & Kraus, LLP, Deposit Account No. 01-2135 (Case: 306.46280X00), and please credit any excess fees to such deposit account.

Respectfully submitted,

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